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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/781,602

02/18/2004

Baruch Gedalia

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EXAMINER

PAINTER, BRANON C

ART UNIT

PAPER NUMBER

3633

MAIL DATE

DELIVERY MODE

02/19/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/781,602	<b>Applicant(s)</b> GEDALIA ET AL.	
	<b>Examiner</b> BRANON C. PAINTER	<b>Art Unit</b> 3633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities:
  - a. Page 8, line 1: the amended version of the subtitle appears to read “PREFERED.” For the purpose of this examination, the examiner presumes this should read “PREFERRED.” Appropriate correction is required for all the preceding objections.

### ***Claim Objections***

2. Claims 16 and 18 objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Both claims 16 and 18 recite merely that “the carbon fiber fabric comprises carbon fibers predominantly along a direction substantially perpendicular to the axis of the metal container,” and do not further limit the independent claims 15 and 17, which claim “carbon fiber fabric...extending...predominantly in a direction substantially perpendicular to the axis of the metal container.”

### ***Claim Rejections - 35 USC § 102***

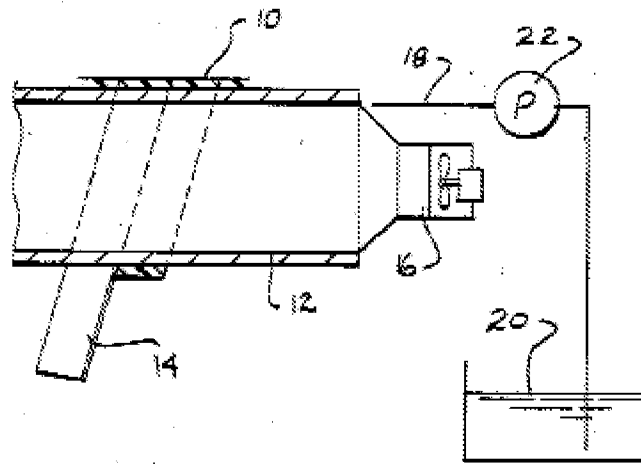
3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 3633

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 5-9, 12, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Mandel (U.S. Patent No. 4,544,428).
5. Regarding claim 8, Mandel discloses a reinforced pressure tank having all of the applicant's claimed structure, including:
  - a. "Metal container...surrounded over at least a part of its height with carbon fiber fabric bonded to the external surface of the metal container..." ("tank" 10 made of "lightweight metal" 12 surrounded by "fibers" 14 bonded with resin, Fig. 1; "wrapping an inner tank of aluminum having a wall thickness of 2 mm, with carbon fibers impregnated with a synthetic resin," column 2, lines 44-53).
  - b. "...the carbon fiber fabric being placed in bands extending substantially around the entire circumference of the metal container, predominantly in a direction substantially perpendicular to an axis of the metal container." ("resin-impregnated fibers" 14, Fig. 1).



Reproduced from U.S. Patent No. 4,544,428

6. Regarding claim 9, Mandel discloses carbon fiber fabric bonded so that the carbon fibers lie predominantly in a direction substantially perpendicular to the axis of the metal container ("resin-impregnated fibers" 14, Fig. 1).
7. Regarding claim 10, Mandel discloses a partly-filled metal container being surrounded with a carbon fiber fabric without being emptied ("tank" 10 is filled with air, Fig. 1).
8. Regarding claims 12 and 13, Mandel discloses carbon fiber fabric bonded to the metal container in several superposed layers [claim 12], wherein the number of superposed layers varies with height [claim 13] ("The wall thickness of the wrapping varies in accordance with the shape of the tank and amounts to a multiple of the inner tank wall thickness," column 2, lines 44-53).
9. Regarding claims 1-3, 5, and 6, Mandel discloses the method steps of claims 1-3, 5, and 6. The method steps can clearly be seen in Mandel's specification and drawings.

10. Claims 1 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Enders et al. (DE 3,826,464; Derwent 1989-062184).
11. Regarding claim 8, Enders et al. discloses a reinforced tank having all of the applicant's claimed structure, including:
  - a. Metal container...surrounded over at least a part of its height with carbon fiber fabric bonded to the external surface of the metal container..." (metal tank with at least part of its exterior bonded with epoxy resin to layers of fabric that can contain "carbon or glass fiber mat," Derwent Abstract).
  - b. "...the carbon fiber fabric being placed in bands extending substantially around the entire circumference of the metal container, predominantly in a direction substantially perpendicular to an axis of the metal container." (fabric layers are bonded to at least part of its exterior, Derwent Abstract; fabric layers 11a-i, Fig. 1).
12. Regarding claim 1, Enders et al. discloses the method steps of claim 1. The method steps can clearly be seen in Enders et al. specification and drawings.

***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

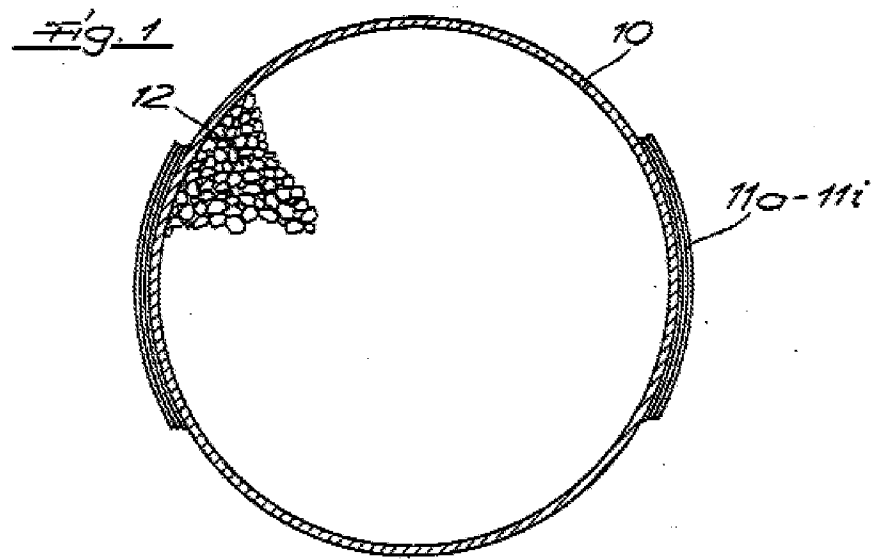
15. Claims 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mandel (U.S. Patent No. 4,544,428) in view of Toth et al. (U.S. Patent No. 4,614,279).

- a. Mandel discloses a reinforced pressure tank as set forth above.
- b. Mandel does not expressly disclose redirecting the bonded carbon fiber fabric in order to bypass projecting regions of the container.
- c. Toth et al. discloses wrapping filaments in a way that bypasses a pressure vessel projection ("An obvious solution to the problem is to cut access openings in the liner which is to serve as the winding mandrel and then plug those openings with temporary closure members which serve to direct the winding filaments around the access openings," column 1, lines 51-62). Wrapping the carbon fiber fabric of Mandrel around projections as taught by Toth et al. is a method well-known in the art and allows the fibers to be bonded around the projection without covering the projection or being severed at points around the projection.

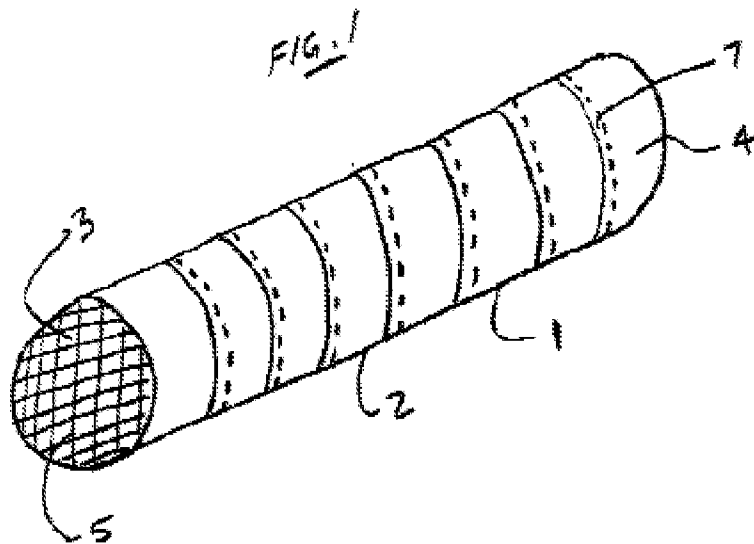
- d. Mandel and Toth et al. are analogous art because both are from the field of endeavor of reinforced metal containers.
  - e. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the carbon fiber fabric bonding of Mandrel by providing a method to bypass projections as taught by Toth et al., in order to reinforce the area near the projection.
  - f. Regarding claim 11, the combined method steps render the claimed apparatus obvious since such would be the logical product formed from the combination.
16. Claims 5, 7, 12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Enders et al. (DE 3826464; Derwent 1989-062184) in view of Roy (U.S. Pub. No. 2002/0088805).
- a. Enders et al. discloses a reinforced tank as set forth above.
  - b. Enders et al. does not expressly disclose that the carbon fiber fabric is placed in superimposed bands offset from each other by half the width of a band [claims 5, 7, 12, and 14].
  - c. Roy discloses fabric that extends around the entire surface of the metal container and is placed in superimposed bands offset from each other ("sheet material" 4 with "overlap" 7, Fig. 1) [claims 5 and 7]. Wrapping the carbon fiber fabric of Enders et al. in overlapping fashion as taught by Roy ensures the entire structure has some amount of reinforcement.



- d. The examiner notes that although Roy does not explicitly disclose that the fabric bands overlap each other by half the width of a band, it would have been obvious to one of ordinary skill in the art at the time of the invention to use an overlapping pattern where bands overlap each other by half the width of the band, since that wrapping pattern allows for the entire metal container to be uniformly reinforced. This uniform reinforcement prevents the introduction of weak portions to the container during the wrapping process [claims 7 and 14].
- e. Enders et al. and Roy are analogous art because both are from the field of endeavor of wrapped metal containers.
- f. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the reinforced tank of Enders et al. with a wrapping pattern as taught by Roy, in order to produce a uniformly reinforced container.
- g. Regarding claims 12 and 14, the combination renders the claimed method steps obvious since such would be the logical manner of using the combination.



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Reproduced from U.S. Pub. No. 2002/0088805

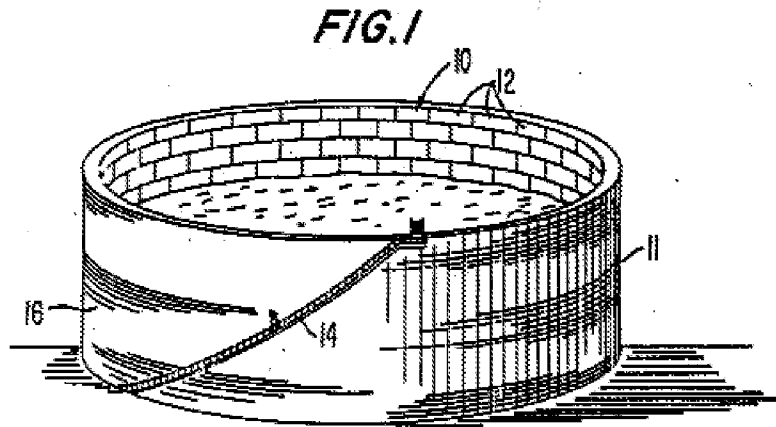
17. Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fawley (U.S. Patent No. 5,289,942) in view of Wills (U.S. Patent No. 4,690,295).
18. Regarding claims 17 and 18:
- a. Fawley discloses a reinforced container including:

- i. “Metal container...comprising a generally cylindrical container with a longitudinal axis...” (“tank shell” 11 made of “steel plates” 12, Fig. 1) [claim 17].
  - ii. “...surrounded over at least a part of its height with...fiber fabric...” (“composite material” 16 including “filaments” 18 and bonding “resin” 20, Fig. 1; “The resin 20 also causes the filaments 18 to adhere to the shell 11,” column 6, lines 38-40) [claim 17].
  - iii. “...passively bonded to the external surface of the metal container...” (“The apparatus is operated such that the filaments 18 are applied with an insignificant or insubstantial tension, using only enough tension to keep the filaments 18 straight and untangled and to permit them to adhere, as a result of their resin coating, to the surface of the plates 12. The use of such little tension helps avoid breakage of the filaments 18 and avoids placing a prestress on the shell 11,” column 7, lines 30-37) [claim 17].
  - iv. “...the carbon fiber fabric being placed in bands extending substantially around the entire circumference of the metal container, predominantly in a direction substantially perpendicular to an axis of the metal container.” (“composite material” 16 including “filaments” 18, Fig. 1) [claim 17, 18].
- b. Fawley discloses the claimed invention except that fiberglass is used as the reinforcement fiber instead of carbon fibers. Wills shows that carbon fibers

and glass fibers are equivalent structures known in the art ("the outer layer 3 comprises...glass fiber reinforced fibrous windings substantially covering the surface," column 2, lines 3-5; "outer layer 3 is a structural fiber such as a carbon fiber...a glass fiber," column 3, lines 9-10). Therefore, because these two tank-reinforcing fibers were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute the glass fibers of Fawley for carbon fibers as taught by Wills.

- c. The examiner further notes that it would have been an obvious matter of design choice to modify the reinforcing wrap of Fawley by using carbon fibers instead of glass fibers, since applicant has not disclosed that carbon fibers solves any stated problem or is for any particular purpose and it appears that glass fibers would perform equally well in reinforcing a metal container.
- d. It would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the glass fibers of Fawley with carbon fibers, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.
- e. The examiner notes that claim 17 is considered to be a product-by-process claim due to the phrase "passively bonded." The patentability of the product does not depend on its method of production. Determination of patentability is based on the product itself. See MPEP 2113. If the product in the

product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).



Reproduced from Fawley

19. Regarding claims 15 and 16, the combination renders the claimed method steps obvious since such would be the logical manner of using the combination.

### ***Response to Arguments***

20. Applicant's arguments filed 11/08/07 have been fully considered but they are not persuasive.
21. In response to applicant's argument that the references Mandel and Enders et al. fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "passive" wrapping, adhesive bonding in claims 1, 8) are not recited in the rejected claim(s). Although the claims are interpreted in

light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

22. Applicant further argues against the Mandel, suggesting that Mandel does not teach the adhesive bonding of the wrapped material to the outside surface of a metal container. The examiner first notes that the bonding is not claimed as adhesive bonding as mentioned above. Secondly, the examiner notes that the fiber of Mandel is considered bonded to the container by its tight wrapping, as this tightness prevents the fiber from sliding off the container, and thus effectively bonds it to the container.
23. The examiner also notes that it is notoriously well-known in the art to impregnate glass or carbon fibers with a resin for the purpose of adhering said fibers to an underlying structure (in this case, the outer container wall). Once the container has been wrapped with the impregnated resins, means are employed to cure the resin, bonding fibers both to each other and to the outer container wall. The examiner provides evidence of the well-known nature of providing resin impregnation for use as an adhesive as taught by Patton et al. (U.S. Patent No. 6,146,482): "The fibers may be impregnated with the resin, e.g., by passing them through a bath or over a coating roller or the like, immediately before wrapping the pipe. The resin then should be cured. In a preferred embodiment, the resin impregnated fibers are exposed to a suitable source of UV light either by rotating the pipe to expose the entire circumference or by moving a UV light source which surrounds the pipe along the length of the pipe. The cured resin forms a fluid impervious composite mass

which prevents the ingress of moisture and dirt, and also bonds the fibers to one another and to the pipe (column 5, lines 17-27).

24. Applicant argues that Enders fails to teach a wrapping that extends substantially around the entire circumference of the metal container, citing the partial wrapping of Fig. 1. However, the text of Enders does disclose that the circumference of the container may be either partially or completely surrounded with the laminate material (Enders et al., column 4, lines 25-29). The examiner notes that an oral translation of this sentence by USPTO translator John Koytcheff on 02/12/08 confirmed that Enders discloses the container may be entirely surrounded with the laminate material. A request for an official translation of Enders has been made, and when the official translation is complete it will be provided to applicant.

### ***Conclusion***

25. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
26. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed,

and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRANON C. PAINTER whose telephone number is (571)270-3110. The examiner can normally be reached on Mon-Fri 7:30AM-5:00PM, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Glessner can be reached on (571) 272-6843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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Examiner, Art Unit 3633  
02/12/08

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